

REMARKS

Claims 2, 6-7, 16, 18, 32, and 37-41 have been withdrawn from consideration. Claim 1 is amended. After entry of this amendment, claims 1, 3-5, 8-15, 17, 19-31, and 33-36 will remain pending in the patent application.

Entry of the Amendment is proper under 37 C.F.R. §1.116 as the amendments: (a) place the application in condition for allowance for the reasons discussed herein; (b) do not present any new issues that would require further consideration and/or search as the amendments merely amplify issues discussed throughout the prosecution; and (c) place the application in better form for appeal, should an appeal be necessary. The amendments are necessary and were not earlier presented as they are in response to a new ground of rejection entered in the Final Rejection. Entry of the Amendment is thus respectfully requested.

Claims 1, 3-4, 8-10, 14-15, 19, 21, 26, 28-29, 31, and 34-35 were rejected under 35 U.S.C. §102(b) over Anderson et al. (U.S. Pat. No. 5,922,591) (Anderson). The rejection is respectfully traversed.

Claims 1, 3-4, 8-10, 14-15, 19, 21, 26, 28-29, 31, and 34-35 are patentable over Anderson at least because they recite a device for analyzing a plurality of sample components combining a number of elements comprising, for example, a drawn substrate having a length and at least two drawn channels formed therein, said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels formed therein. Anderson does not describe a device including at least this feature. Therefore, Anderson does not describe each and every feature recited by claims 1, 3-4, 8-10, 14-15, 19, 21, 26, 28-29, 31, and 34-35 and, as a result, cannot anticipate these claims.

In contrast to the device recited by claims 1, 3-4, 8-10, 14-15, 19, 21, 26, 28-29, 31, and 34-35, Anderson discloses a miniaturized integrated nucleic acid diagnostic device and system. As mentioned in the response to the Office Action dated August 19, 2003, Anderson discloses a device having a body that defines various reaction chambers and fluid passages in which sample collection and other operations can be carried out. However, contrary to what is asserted by the Examiner, Anderson does not disclose a drawn substrate having the above mentioned feature. Specifically, it is respectfully submitted that the Examiner errs in stating that "Anderson et al. discloses a 'drawn substrate' in that 'the device may be formed from a plurality of distinct parts that are later assembled or mated.'" (See Office Action on page 15 paragraph 13) The Examiner's attention is drawn to the fact that a drawn substrate is a "body

of material drawn from the preform body” and that the preform body is “the initial substrate with machined or otherwise formed channels prior to having its cross sectional area reduced by the draw process.” (See the definitions on page 6 of the patent specification, emphasis added). The draw process being defined as “the process whereby a substrate in the form of a block or rod is drawn, usually while being heated, stretching it along its length and reducing the cross sectional area to a desired size.” *Id.* It is, therefore, respectfully submitted that a drawn substrate is not a substrate formed from a plurality of distinct parts, as contended by the Examiner in the Office Action. It is also respectfully submitted that Anderson makes no mention whatsoever of a drawn substrate made by a draw process.

Accordingly, reconsideration and withdrawal of the rejection of claims 1, 3-4, 8-10, 14-15, 19, 21, 26, 28-29, 31, and 34-35 under 35 U.S.C. §102(b) over Anderson are respectfully requested.

Claims 1, 3-5, 8-10, 14-15, 17, 20-31, and 33-36 were rejected under 35 U.S.C. §102(b) over Beattie (U.S. Pat. No. 5,843,767). The rejection is respectfully traversed.

Claims 1, 3-5, 8-10, 14-15, 17, 20-31, and 33-36 are patentable over Beattie at least because they recite a device for analyzing a plurality of sample components combining a number of elements comprising, for example, a drawn substrate having a length and at least two drawn channels formed therein, said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels formed therein. Beattie does not describe a device including at least this feature. Therefore, Beattie does not describe each and every feature recited by claims 1, 3-4, 8-10, 14-15, 19, 21, 26, 28-29, 31, and 34-35 and, as a result, cannot anticipate these claims.

In contrast to the device recited by claims 1, 3-5, 8-10, 14-15, 17, 20-31, and 33-36, Beattie discloses a microfabricated, flowthrough porous apparatus for discrete detection of binding reactions. More particularly, Beattie discloses nanochannel glass arrays that are fabricated by arranging dissimilar glasses in a predetermined configuration. (See col. 9, lines 60-61) It is respectfully submitted that the device disclosed by Beattie fundamentally differs from the claimed device of the present invention because the array of drawn channels is not made/drawn from a preformed array having corresponding channels formed therein. Specifically, Applicants note that Beattie starts with an assembly (a rod and a tube) having no channel formed therein and creates an array of portions of this assembly after cutting, re-stacking, re-fusing and re-drawing this assembly several times. (See col. 9, lines 62-67 and col. 9, lines 67, col. 10, lines 1-4) Then, the channels are formed in this assembly only after

etching away part of this assembly (in this particular case, the etchable rod). (See col. 10, lines 14-15) Therefore, it is respectfully submitted that the device recited in claims 1, 3-5, 8-10, 14-15, 17, 20-31, and 33-36 differs from the microarray disclosed in Beattie. This is so, because the physical and chemical properties of the resulting array of channels in Beattie cannot be the same as the physical and chemical properties of the drawn substrate with the drawn channels of the present invention. It is respectfully submitted that the draw process described in Beattie will cause the etchable glass rod and the inert glass tube to inter-diffuse at the interface of the rod and tube. Consequently, the resulting array of channels in Beattie cannot have the same chemical structure (at least on the peripheral layers around the channels) as the chemical structure of a similar drawn array with drawn channels formed therein and, therefore, differs from the device recited in claim 1. In addition, it is respectfully submitted that in order to obtain a similar drawn substrate, like in claim 1 (*i.e.*, a device in which the drawn substrate and the drawn channels formed therein are being drawn from a preform having corresponding channels formed therein), the selectivity of the acid solution towards this assembly (*i.e.*, the etch rate of the rod divided by the etch rate of the tube) would have to be infinite, which is impossible. Moreover, in order to draw simultaneously the rod and the tube, the materials constituting these two elements must have substantially similar physical properties, thereby increasing the difficulty of obtaining high selectivity. In conclusion, Applicants respectfully submit that the nanochannel glass array described in Beattie cannot be the same as the device recited in claim 1 and that Beattie does not teach, suggest, or describe a device as recited in claim 1.

Accordingly, reconsideration and withdrawal of the rejection of claims 1, 3-5, 8-10, 14-15, 17, 20-31, and 33-36 under 35 U.S.C. §102(b) over Beattie are respectfully submitted.

Claims 1, 5, and 11-13 were rejected under 35 U.S.C. §102(b) over Jansen (U.S. Pat. No. 5,173,097). The rejection is respectfully traversed.

Claims 1, 5, and 11-13 are patentable over Jansen at least because they recite a device for analyzing a plurality of sample components combining a number of elements comprising, for example, a drawn substrate having a length and at least two drawn channels formed therein, said drawn substrate and at least two drawn channels being drawn from a preform having corresponding channels formed therein. Jansen does not describe a device including at least this feature. Therefore, Jansen does not describe each and every feature recited by claims 1, 5, and 11-13 and, as a result, cannot anticipate these claims.

In contrast to the device recited by claims 1, 5, and 11-13, Jansen discloses a method


for the manufacture of objects with small complex cross-sections, particularly optical fibers, micro-optical components, such as couplers, and micromechanical components. Jansen discloses that a primary preform of acid insoluble glass and having a complex cross section is formed into a secondary preform having a circular cross-section by the addition of acid soluble glass. However, Jansen fails to teach or suggest drawn channels formed in a drawn substrate, much less drawn channels formed in the drawn substrate wherein said drawn substrate and said drawn channels are drawn from a non drawn substrate having corresponding non drawn channels formed therein. It is respectfully submitted that the elements 21 in FIGS. 2(a)-2(b), which the Examiner is referring to, are not channels but merely fibers, which is fundamentally different.

Accordingly, reconsideration and withdrawal of the rejection of claims 1, 5, and 11-13 under 35 U.S.C. §102(b) over Jansen are respectfully requested.

Applicants have addressed all the Examiner's rejections and objections and respectfully submit that the application is in condition for allowance. A notice to that effect is earnestly solicited.

If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Respectfully submitted,  
PILLSBURY WINTHROP LLP

By:   
Robert C. Perez  
Reg. No.: 39,328  
Tel. No.: (703) 905-2159  
Fax No.: (703) 905-2500

RCP\CFL  
P.O. Box 10500  
McLean, VA 22102  
(703) 905-2000